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AN EPIPALAEOLITICHC INDUSTRY AT ARAB EL SABAHA, MIDDLE EGYPT: A PRELIMINARY REPORT

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AN EPIPALAEOLITHIC INDUSTRY AT ARAB EL SABAHA, MIDDLE EGYPT A PRELIMINARY REPORT

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1. *Introduction*

On leaving the highway along the eastern bank of the Nile at the village of Dar es Salam (formerly Aulad Toq), some 25 km north-west of Nag Hammadi, one proceeds towards the desert fringe along which many small villages are located. In between two of these villages, the hamlet of Esbet Radouan in the north and that of Arab el Sabaha in the south, a small elevation of dark brown Nilotic silts is easily traceable in the landscape due to its proximity to a freestanding, old and magnificent tamarisk tree. The elevation is situated at the northern edge of the hamlet of Arab el Sabaha, just east of the cultivated plain, above which it culminates at a height of approximately 2 m. At the time of its discovery, on the occasion of field survey in April 1981, this small elevation was found almost completely littered with prehistoric stone artifacts.

2. *Morphology and stratigraphy*

The 2 m elevation is obviously one of the several local remnants of a former Nilotic silt terrace, which is in some places slightly lowered by wadi erosion. Elsewhere, such as is the case to the north-west of the site, it is covered by wadi fans composed mainly of sands mixed with limestone pebbles of local provenance. A few tens of meters to the south-east of the site another silt remnant attains a height of 4 m above the present Nile floodplain.
The whole of the silts in the area are deposited in a former Nile bend, which is presently about 300 m wide. This bend is eroded in a higher level, which dips towards the Nile and is covered by local limestone gravel. The outer edge of this fossil wadi fan reaches a height of more than 7 m above the modern floodplain.
The silts, which comprise the artifact-bearing elevation, are fresh but consolidated at the top by a 5-10 cm thick calcrete and display a polygonal system of small desiccation cracks. At the borders of the elevation the duricrust has been truncated. A layer of loose sandy silts, sporadically mixed with local limestone wadi gravels, covers the consolidated silt core. This layer (10 cm thick at the most) contains the quasi-totality of the sampled artifacts. As was observed in some test-pits dug into the silt core, the few artifacts encountered beneath the loose sandy surface silts were limited to the consolidated sand-filling of the desiccation cracks and moreover bore their long axes in a vertical position, suggesting downward migration.
The material included in the present study, exclusively originates from the superficial sandy silt layer and should thus be regarded as surface material, sampled on top of a 2 m Nilotic silt terrace remnant, with which it bears no obvious stratigraphic correlation.

3. *Field procedures*

Prior to sampling, a topographic recording of the site was undertaken (fig. 1). Contour lines are shown with a 0.20 m interval, the indicated heights being relative to the estimated absolute height of the alluvial plain (66.00 m). A base-line, 50 m in length and oriented 135gE,

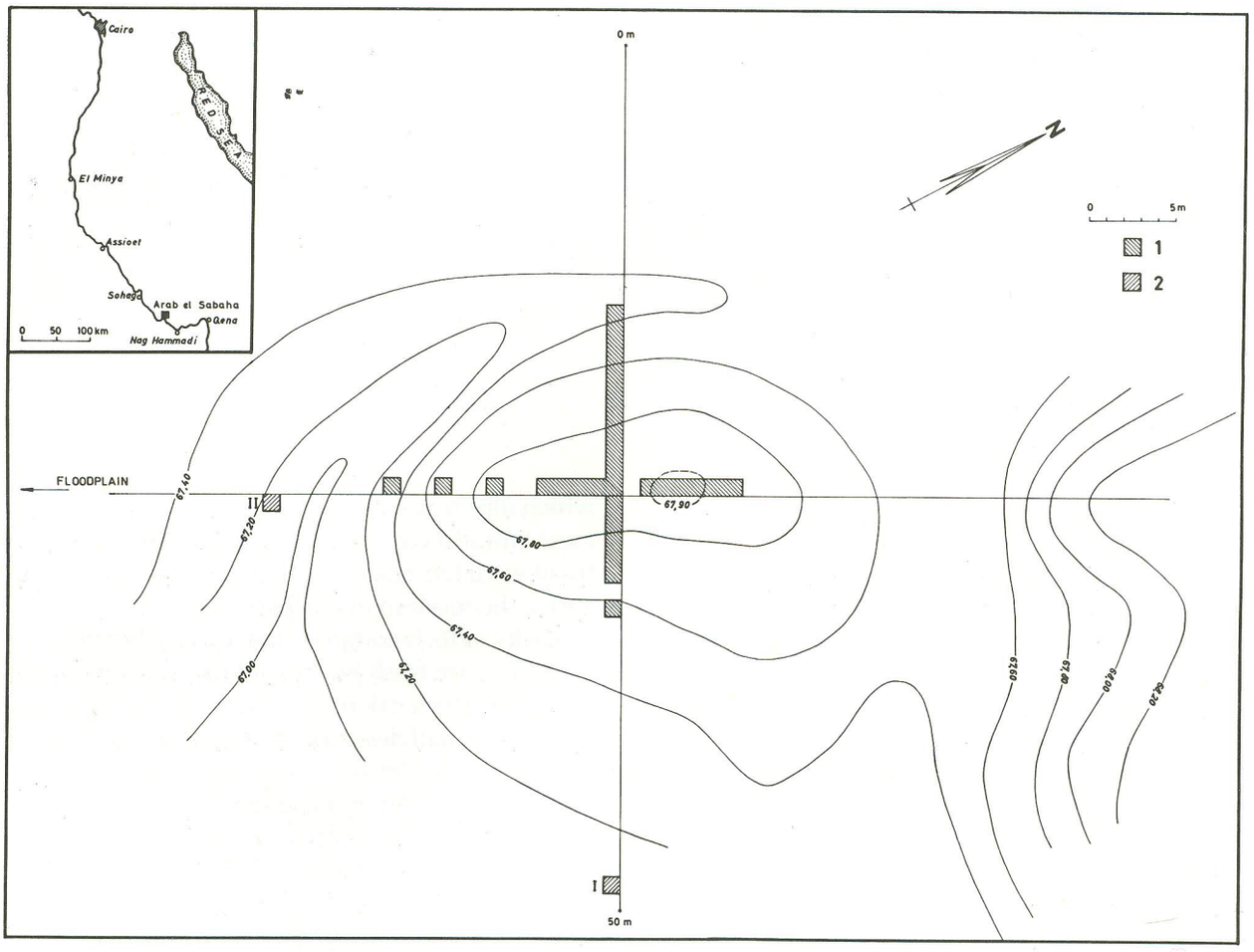

Fig. 1. Topographical sketch of the site with indication of the sampled squares (1) and stratigraphic pits (2).

was positioned into the field, its starting point (0 m) coinciding with the above-mentioned tamarisk tree. The sampling procedure consisted in collecting the archaeological material from some 30 square meters. For this purpose the loose sandy silts of these squares were passed through a 2 mm screen (fig. 2). In addition, for stratigraphical purposes, some pits (I and II) were dug at the outskirts of the elevation.

4. *Archaeological features*

The superficiality and shalowness of the archaeological deposit, much trampled by modern human and animal traffic, did not offer good conditions for the preservation of substantial archaeological features. However, in one of the sampled squares (25S1W) a pit was cleared, roughly triangular in shape, measuring 20 cm along its sides, and reaching down to 90 cm into the unconsolidated silts. The pit was filled with loose aeolian sands completely devoid of archaeological material. The lack of any consolidation within these sands makes its synchronism with the prehistoric occupation little likely.

5. *Archaeological material*

The raw materials utilized consist exclusively of flint. As may be inferred from the cortical surfaces preserved, it was obtained from rolled nodules of the sort that are amply available in the nearby wadi deposits. This flint is generally of good quality and varies in colour from grey to dark brown. In addition, some black flint was

also processed. Only a few artifacts bear weathered surfaces, most are fresh and do not display patination. In general, the entire assemblage offers the impression of homogeneity.

Cores are generally small and most often attain a largest dimension of 3 to 5 cm. In their present state almost 90% have served for the manufacturing of bladelets. From a typological viewpoint (Hassan, 1974: 22) opposed platform cores (fig. 3, *1-3*) slightly outnumber single platform cores (fig. 3, *4*) (50% versus 44%). Amongst the former, flaking is mostly on the same side, adjacent (fig. 3, *3*) and opposite side flaking being much less common. Both the single and opposed platform variants often display facetted striking platforms. It should be stated, however, that the Levallois technique is conspicuously absent. A good deal of the cores preserve patches of cortex adjacent or opposite the flaking surfaces. In many cases these patches may have been removed by the preparation of lateral crests, which are indeed a common feature of the assemblage (fig. 3, *9-10*).

As has been stated, flaking aims essentially at the production of bladelets and – to a lesser extent – blades. Amongst the debitage, however, the usual waste (flakes, chips and debris) abounds. Unworked blades and bladelets, unfortunately highly fragmented, are regular and mostly display parallel edges (fig. 3, *5-8*). Their butt is usually small to punctiform, suggesting the application of advanced flaking technology. A more detailed quantitative and qualitative analysis of their characteristics is forthcoming.

In this preliminary report the analysis and classification of the tool assemblage essentially rests on the typology of J. Tixier (1963). Although originally designed for the study of the Maghreb Epipalaeolithic, this descriptive system has proven its utility far beyond these borders, for Saharan and even Nilotic industries. A preliminary tool inventory, established in accordance with Tixier's type list, is presented in table I.

Amongst the 421 tools listed, end-scrapers, only

Fig. 2. Sampling in progress at Arab el Sabaha. View from the north.

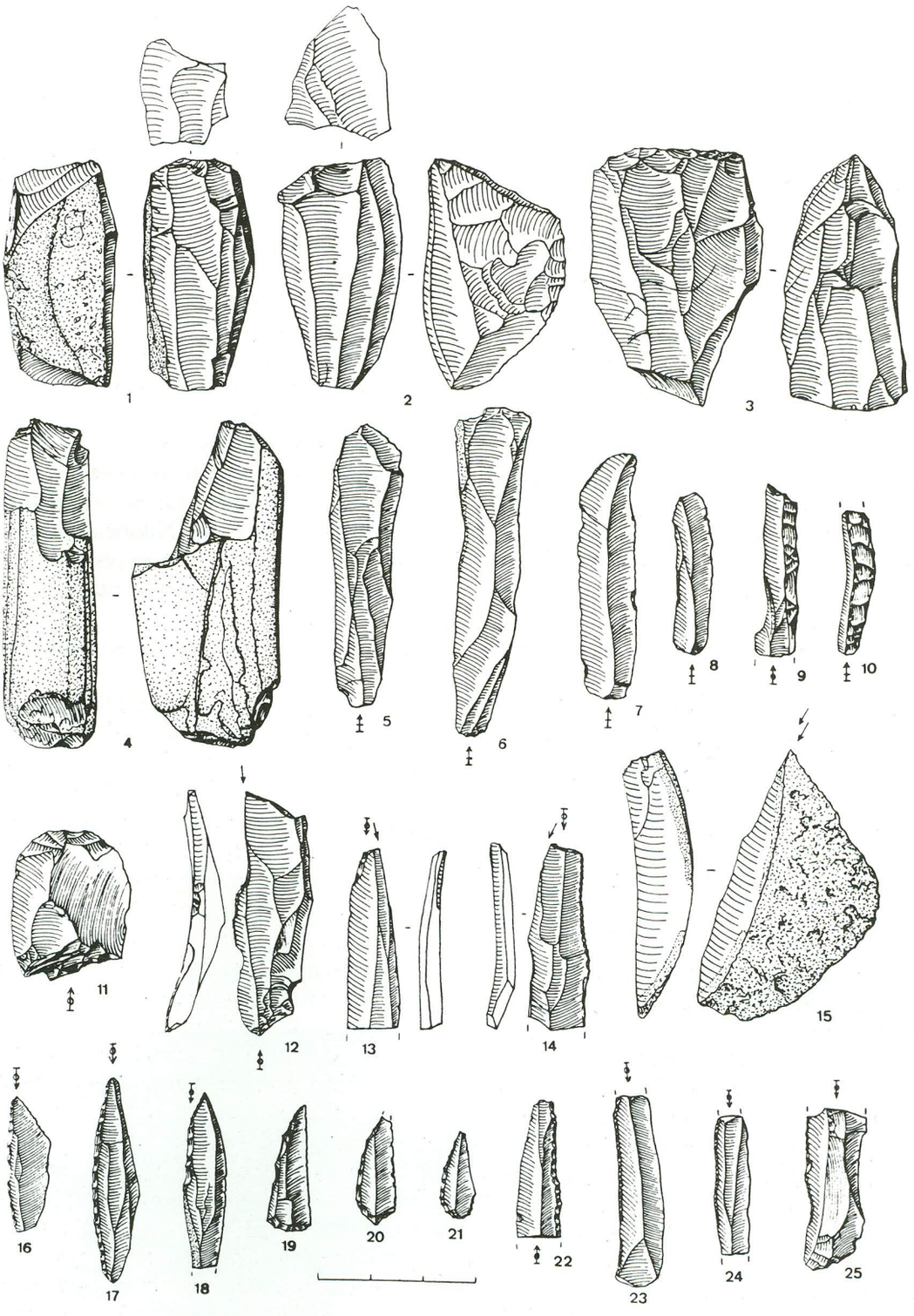

Fig. 3. Lithic industry. 1-3: opposed platform cores; 4: single platform core; 5-8: unworked blades and bladelets; 9-10: single crested bladelets; 11: single end-scraper on a flake; 12-14: burins on a truncation; 15: burin on a break; 16: pointed straight backed bladelet; 17-18: curved backed bladelets; 19-21: curved backed bladelets with rounded base; 22: fragment of a backed bladelet; 23-25: bladelets with Ouchtata retouch.

one of them typical (fig. 3, *11*), are very scarce. Burins however are not uncommon, their presence moreover being substantiated by several burin spalls. Typologically speaking, they are either on truncation (fig. 3, *12-14*) or dihedral. Classified with the latter type are also some burins on a flat butt and a sole specimen on a break (fig. 3, *15*).

Whereas backed blades are extremely rare, backed bladelets (including Ouchtata retouched specimens) abound and account for almost 30% of the total amount of tools. Most of these bladelets are thin and narrow and consequently seldomly complete. The pointed straight type (fig. 3, *16*) is well represented and most often bears the point on the proximal part of the blank. The backing applied is nearly always direct and abrupt. The removals may be very short, often akin to Ouchtata type retouch. A number of these backed bladelets bear an altered, and most often rounded or slightly ogival base, generally shaped by semi-abrupt retouch. The curved backed bladelets (fig. 3, *17-18*) are almost as numerous as their straight backed counterparts. Some of these too display a rounded base (fig. 3, *19-21*). A good deal of backed bladelets are either too fragmentary or too little diagnostic to be catalogued with one of the above types and have been listed as undeterminable fragments (e. g. fig. 3, *22*). Other types of backed bladelets, including partially and obtuse ended backed specimens as well as those displaying a gibbosity, are of lesser numeric importance. In contrast, typical bladelets with Ouchtata retouch, such as those of fig. 3, *23-25*, are unmistakably a most essential component of the lithic industry.

Notched pieces are quite common. In view of the nature of the assemblage (surface collection) part of these may well be accidental. Most, however, are typical and bear carefully retouched notches. Single notched specimens are best represented and consist mostly of bladelets. A good deal of these are fractured in the notch (fig. 4, *1*) and may often have resulted from a failed application of microburin technique.

Truncated pieces account for almost 25% of the total amount of tools and thus constitute the second important type group of the assemblage. Simple truncated pieces (without retouched base) consist quasi-exclusively of bladelets. More than half of these preserve either the distal or the proximal end of the blank and are thus complete (fig. 4, *2-10*). Most of the remainder are fractured under the truncation. The complete specimens have generally been obtained on very small bladelets, the truncations mostly being oblique or very oblique (less than 45°). The tools thus obtained obviously constitute armatures in a true microlithic sense and closely parallel the obliquely truncated points with unretouched base as defined for the north-west European Mesolithic (Daniel and Rozoy, 1966). Some specimens (e.g. fig. 4, *3, 6-7*) even bear a truncation almost conform to a backed edge. In addition to the above type, quite a number of truncated pieces display a modified base. These too have mostly been obtained on very small bladelets and are truly microlithic in size. Bases are mostly rounded (fig. 4, *11-13*), sporadically ogival or even kinked. In some instances, the base is constituted by an almost straight transverse truncation (e.g. fig. 4, *14*), resulting in some kind of trapezoidal armature, quite different however from real trapezes both morphologically and technologically.

Indeed, true geometric microliths are only represented by a number of small scalene triangles (fig. 4, *15-19*). In half of the cases the small truncation is more or less convex. As for the truncated pieces above, the lateralisations are quasi-exclusively to the left.

The use of microburin technique is well attested. Some bladelets preserving a trihedral point probably represent unfinished armatures. The true microburins (fig. 4, *20-21*) are either distal, proximal or opposed to a fracture. Some typical Krukowski specimens are also present. The microburins are consistently lateralised to the right, which is of course in close correlation with the consistent lateralisation of truncated pieces and triangles.

With the miscellaneous tool types a number of pieces with continuous retouch have been classified (e.g. fig. 4, *22*). A unique slightly convex side-scraper (fig. 4, *23*) was elaborated on a tabular flint nodule. A most distinctive feature of the industry indeed are the numerous blades and bladelets with altered base (proximal end), a selection of which is shown in fig. 4, *24-35*. In all cases the basal retouch has not completely removed the bulb of percussion. Its shape is mostly ogival and thus pointed. A

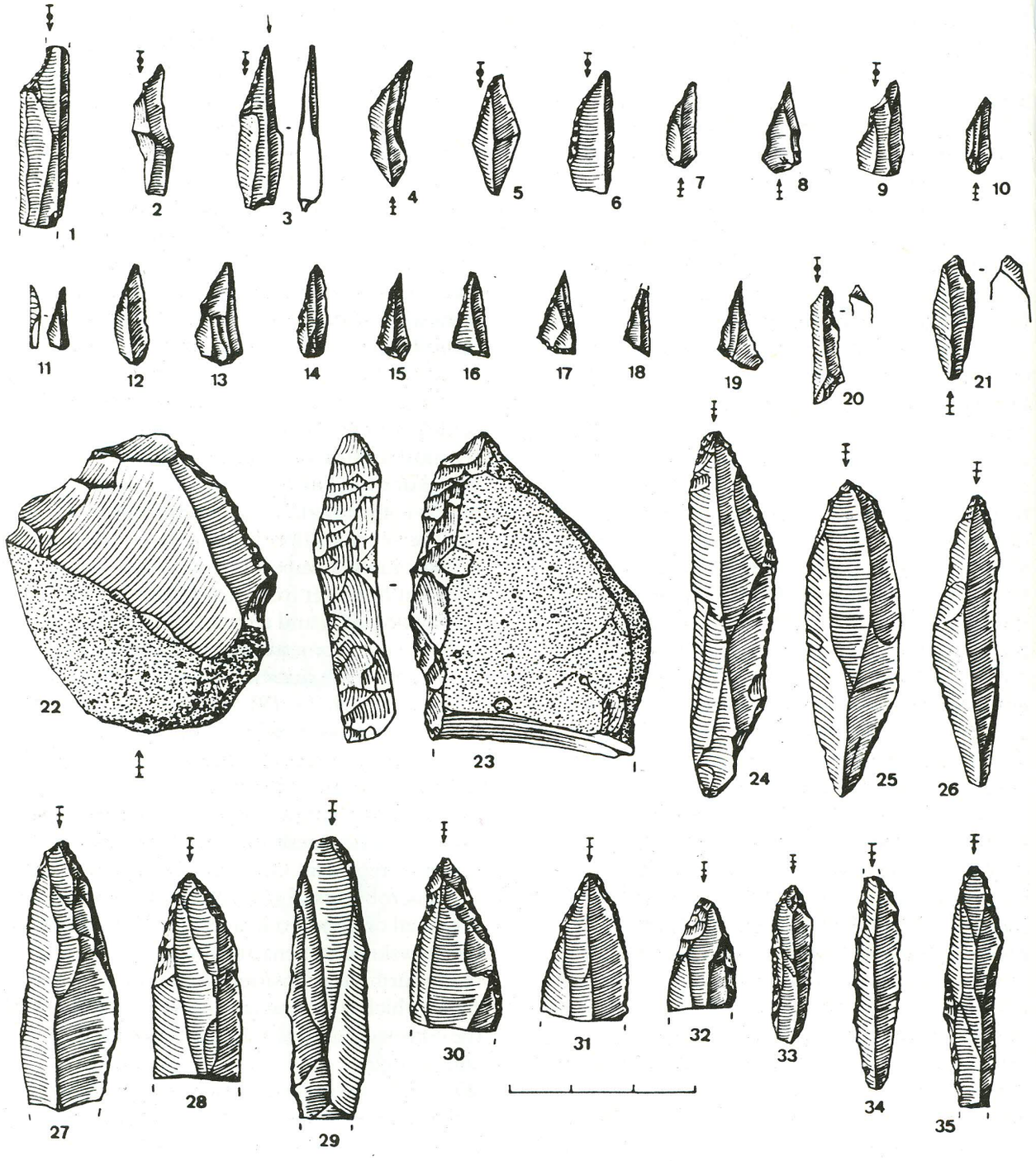

Fig. 4. Lithic industry. 1: notched bladelet; 2-10: truncated pieces; 11-14: truncated pieces with retouched base; 15-19: scalene triangles; 20-21: microburins; 22: piece with continuous retouch; 23: side-scraper; 24-32: blades and bladelets with altered base; 33-35: backed bladelets with altered base.

number of specimens however display only a narrowed base and also preserve part of the butt (e.g. fig. 4, *29*). In addition, in an equal number of cases, the retouched base is associated with a backed edge (fig. 4, *33-35*). A good deal of these tools with altered base were obtained on real blades, and it seems quite obvious that the production of the latter type of flaking products was specifically oriented towards the manufacturing of these particular tool types. Conditions for organic preservation being extremely poor, faunal remains are limited to some dental fragments of a large bovid (determined by W. Van Neer). In view of the nature of the site, their correlation with the artifactual assemblage is of course not at all certain.

6. *Discussion of the data*

From the preliminary technological and typological analysis of the Arab el Sabaha assemblage a number of prominent features emerge. First and foremost, the technology is essentially oriented towards the production of bladelets, although a good deal of true blades were also obtained. For this purpose, opposed platform cores and single platform cores were flaked in nearly equal numbers. The Levallois technique, however, was not at all utilized. Typologically speaking, the assemblage is essentially dominated by backed bladelets (including Ouchtata retouched specimens) and truncated pieces, which together account for no less than 53% of the toolkit. In quite a number of cases these tools display altered (mainly rounded or slightly ogival) bases. They are furthermore marked by a strong tendency towards microlithism. Another distinctive feature of the industry are also the numerous blades and bladelets with altered base (or proximal end). Notched pieces are fairly frequent too, whereas burins and especially end-scrapers are much less common. Geometric microliths, which consist exclusively of triangles, are substantially present and the microburin technique was readily applied.

In view of the artifactual evidence above, the Arab el Sabaha assemblage is surely to be classified with the Epipalaeolithic or Late Palaeolithic non-levalloisian blade industries of the lower Nile Valley. Schematic reviews of these Late Pleistocene and Early Holocene occurrences have recently been presented by F. Hassan (1980), C. Roubet and N. El Hadidi (1981) and P. E. L. Smith (1982). It seems that the closest similarities of the Arab el Sabaha assemblage are with the Silsilian of the Kom Ombo Plain, first defined and rudimentarily described by P. E. L. Smith in 1966 (see also Smith, 1967, 1968a, 1968b). It is most unfortunate that, after almost two decades following the recognition of the Silsilian (1962-63), we still do not dispose of a detailed, well-illustrated quantitative and qualitative analysis of its eponymous industry. For the present, comparisons can thus only be undertaken in general terms.

The Silsilian of the type-site Gebel Silsileh Locality III (GS-1-III) is characterized by the emphasis on small blades and bladelets, on which most of the finished tools were obtained. Despite the use of different raw materials, mainly exotic Nilotic pebbles (e.g. chalcedony), its technology and typology seem quite similar to those of the Arab el Sabaha assemblage. Cores are small and often with opposed platforms. The microburin technique was extensively used and there is no evidence of Levallois technology. Within the toolkit, burins (on a break and on truncation) and end-scrapers occur in small numbers. The emphasis is essentially on (partly or fully) backed and pointed microlithic implements (including Ouchtata retouched specimens). The bases are very commonly ogival or rounded by retouch or may as well be left unretouched. Geometric microliths are rare, but include some triangular and trapezoidal forms. In addition, bladelets (and blades?) with altered base and unretouched distal end are also present. As far as may be judged from the artifacts figured by Smith, there are certainly close parallels between the Silsilian of Kom Ombo and the Arab el Sabaha assemblage, but the data available are insufficient to permit a firmer judgement on the degree of affinity between the two.

Following Smith's first recognition of the Silsilian at GS-1-III, other Silsilian-like assemblages have been recovered in the lower Nile Valley. Fortunately, some of them have received more substantial treatment in

prehistoric literature and allow a better understanding of the true nature of the Silsilian. Also in the Kom Ombo Plain, less than 2 km to the south of GS-1-III, a Silsilian occupation site with preserved fauna (designated GS-2B-II) was partly excavated by the Yale Prehistoric Nubia Expedition in 1963. Its geology, archaeology and palaeo-ecology were circumstantially reported on by J. L. Phillips and K. W. Butzer in 1973. The industry, according to the authors geologically *in situ* in the Darau Member of the Gebel Silsila Formation (Butzer and Hansen, 1968: 274), was dated back to 14,390 ± 200 B.P. on the basis of a C14 shell date (I-5180). A second date (on charcoal) of 15,310 ± 200 B.P. (Y-1376) is rejected by Phillips and Butzer as too old and presumably derived from older, reworked strata. Another Silsilian-like assemblage was recovered by F. Wendorf and R. Schild (1976) almost 80 km to the north of the Gebel Silsileh sites, at Deir El-Fakhuri beyond Esna. The occurrence, designated E71K20, is situated on the exposed surface of a Ballana dune and did not yield any datable materials.

Despite again the use of different raw materials, Nilotic pebbles at Gebel Silsileh and wadi-derived flint at Esna, the GS-2B-II and E71K20 assemblages have much in common. According to Phillips and Butzer (1973), the degree of affinity between the two is such, that they should be considered as part of the same archaeological culture. On the basis of this finding, the authors enumerate a series of general, technological and typological parameters allowing a more comprehensive description of the Silsilian. Although not all of these parameters are testable at Arab el Sabaha, the archaeological assemblage from that site seems to fit very well into the general framework established by Phillips and Butzer. Next to the close technological similarities, the typology is quite conformable. This may easily be inferred from a comparison of the main typological indices at Arab el Sabaha, GS-2B-II and E71K20 (see table II). In view of the close similarities between the assemblages, which need not to be commented, the discrepancies, such as the substantial presence of geometric microliths at Arab el Sabaha only, may be termed functional or chronological rather than cultural. A remaining and puzzling discrepancy, however, differentiating the Arab el Sabaha assemblage from the rest, is the extreme tendency towards microlithism. This may be judged from the artifact drawings, but is also metrically evident. At GS-2B-II, the sole assemblage for which artifact measurements have been published, tools average a length of 2.0 cm. None are inferior to 1.5 cm, whereas at Arab el Sabaha they are very frequently. However, in our conviction that typological similarity is a more reliable indicator of cultural affinity than is metric conformity, we tentatively wish to assign the Arab el Sabaha assemblage the status of Silsilian.

7. *Conclusions*

Up to now Silsilian or Silsilian-like assemblages have been reported along both banks of the Nile, at the Kom Ombo Plain and near Esna. The discovery of the Arab el Sabaha assemblage enlarges this hitherto known distribution area with at least 100 km to the north. Unfortunately, the stratigraphic context of the industry is not exclusive as to its age and, in the absence of datable materials, its contemporaneity with the Kom Ombo assemblages may not adequately be investigated. Eventually, the extreme tendency towards microlithism and the substantial presence of geometric microliths may be held indicative for a more advanced chronological position. The location of the site, on an elevation bordering the alluvial plain, suggests riverine occupation during the annual Nile flood, but in the absence of other, more conclusive palaeo-ecological evidence this remains very conjectural.

In view of the artifactual remains, the site is obviously a combined occupation and flaking area, the lack of any typical food gathering or processing implements and the emphasis on pointed microlithic tools (armatures) moreover indicating an economy essentially dependent on hunting and/or fishing activities.

In several publications P. E. L. Smith (1966 b, 1968 a, 1968 b) has premised the intrusive character of the Silsilian in the Nile Valley. According to him, it is ultimately linked with similar traditions in the Mediterranean basin, such as the Dabban, Iberomaurusian or even the

Late Pleistocene industries of the Levant. Indeed, up to now the immediate background to the Late Palaeolithic Nile Valley inhabitants is poorly understood. The recent discovery of a typical blade industry at Nazlet Khater near Tahta, Middle Egypt (Vermeersch *et al.*, 1982), dating back to 31,500 B.P., offers new and exciting evidence as to the history of blade technology in the Nile Valley. Whether the blade industries of 18,000 B.P. and later derive their origin from a similar background is not yet clear. There still remains a gap in knowledge of more than 10,000 years during which blade industries, along with more conservative Levallois technique traditions, could flourish and ultimately develop into the unparalleled cultural amalgam, which is the Nile Valley Late Palaeolithic.

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